

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

| | | |
|--|---|----------------------|
| In the Matter of |) | |
| |) | |
| Spectrum Policy Task Force |) | ET Docket No. 02-135 |
| Seeks Public Comment On Issues Related |) | |
| To Commission's Spectrum Policies |) | |

**COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

The Telecommunications Industry Association ("TIA") hereby submits comments on a range of issues relevant to spectrum policy, in response to the Public Notice in the above-captioned proceeding.¹ TIA is the leading trade association representing the communications and information technology industry, with over 1,100 member companies that manufacture or supply the products and services used in global communications. Among their numerous lines of business, TIA member companies design, produce and deploy terrestrial and satellite wireless network and terminal equipment. As a result, TIA has a substantial interest in current and future Commission spectrum management decisions and activities.

TIA seeks to assist the Commission, and specifically its Spectrum Policy Task Force ("SPTF"), with its review of current spectrum policies. TIA applauds the Commission's establishment of the SPTF. TIA has long believed that sound spectrum management is critical to the future success of the communications industry. While the

¹ Public Notice, DA-02-1311 (released June 6, 2002).

comments that follow may not track neatly the questions posed in the Public Notice,² they do broadly address many of the critical issues affecting spectrum management policy and are based on policy positions previously approved by TIA's diverse membership.

I. *Spectrum Harmonization*

Spectrum increases greatly in value and utility to the service providers if it is harmonized with spectrum allocated for similar use in other countries.

Different Aspects of Harmonization

- “Spectrum Harmonization”,
refers to the use of the same spectrum bands, pairings, channels, duplex directions, duplex separation distances, out-of-band emissions, etc for the deployment of the same or similar services in different countries. Spectrum harmonization is achieved in the domestic and international regulatory domain.
- “Technology Harmonization”,
refers to the use of a common radio equipment technology in the deployment of the same or similar services in different countries. Technology harmonization in the mobile wireless area is generally achieved in the commercial, rather than regulatory, arena in the United States. Other countries provide varying degrees of freedom in different frequency bands for commercial enterprises to select the technology used.

² See *Public Notice* at 1.

Spectrum harmonization provides important benefits to technology providers and service operators that can be passed on to consumers. These benefits can be augmented by, but can be realized without, technology harmonization. Likewise, technology harmonization provides additional benefits that can be augmented by, but can be realized without, spectrum harmonization. Accordingly, the benefits of spectrum harmonization vary to some degree with the amount of technology harmonization.

Benefits of Spectrum Harmonization

- Smaller terminal equipment size due to higher degree of electronics integration, fewer frequency-related components, and a resultant reduction in terminal power requirements and battery size.
- Lower equipment development and production costs due to economies of scale, and reuse of components and engineering solution.
- General benefits of increased economies of scale and competition in a large “spectrum harmonized” market, including:
 - Earlier market availability of new features and services.
 - Larger product variety serving more consumer segments.
 - Higher penetration rates for some services/applications.
 - Lower market prices for equipment.
 - For mobile wireless and satellite, facilitates roaming.

In summary, with harmonization consumers can have access to terminals that are less expensive, smaller, have lower power consumption, longer usage times, more functionality and better serve the needs of the customer. Furthermore, service providers can provide national, international and/or global roaming more cost effectively. New products and services can be brought to market more quickly, and can be offered in greater variety. Finally, the terrestrial wireless and satellite markets can grow faster.

II. *Spectrum Auctions for Commercial Wireless Services*

The following principles are applicable to auctions conducted for the purpose of authorizing the use of spectrum for commercial wireless services:

- licenses should be assigned quickly and with minimal administrative costs;
- auctions are not appropriate for all types of services;
- the objective of auctions should be to ensure that the entity obtaining the spectrum will put the public spectrum resource to its best and highest value use;
- auctions may be an effective license assignment tool, but they are not a substitute for sound spectrum allocation decisions;
- auctions should be structured to facilitate deployment of services and not be used solely as a means to generate public revenue;
- prospective bidders should be given sufficient time to make technology investment decisions, establish business plans, and develop bidding strategies;

- auctioned spectrum should be unencumbered or a relocation plan should be put in place, prior to auction, to create certainty for operators about when spectrum will be available for use;
- if auctioned spectrum is encumbered, proceeds from the auction should fund the relocation of incumbents;
- proper spectrum management requires long-term planning.

Economically Efficient Spectrum Assignment Process

While auctions may provide an efficient means for assigning licenses, the costs of auctions and associated incumbent relocations place a tremendous financial burden on licensees, which ultimately affects the costs to end-users. When assigning spectrum, a regulator, following due diligence, needs to assign licenses quickly and with minimal administrative costs to the entity that will make the best use of this public resource.

There are a number of mechanisms being utilized worldwide to assign commercial wireless licenses, including auctions, “beauty contests,” and other approaches. Perhaps one of the most commonly used mechanisms today is auctions. In many cases, auctions can be an efficient mechanism for assigning spectrum licenses because they result in prompt assignment to those who will put the spectrum to its highest valued use.

While auctions may be an effective license assignment tool, they are not a substitute for sound spectrum allocation decisions. Moreover, auctions should be structured to facilitate deployment of services and should not be used solely as a means to generate public revenue. Auctioning of spectrum simply to meet public budget

objectives often results in inefficient spectrum uses, diminished investments in innovative technologies, higher equipment and service prices, and delayed deployment. Proper spectrum management requires long-term planning that balances the needs of private, public, and commercial interests. Where technically feasible, opportunities to effectively share spectrum among different uses should be pursued as a means to increase spectrum efficiency. For example, the unlicensed use of spectrum under Part 15 of the FCC's rules has led to the development of entirely new applications of wireless technology, a trend which should be encouraged where there is satisfactory demonstration of no harmful interference to licensed systems.

Before assigning licenses, regulators should establish service rules that clearly define the initial geographic scope and bandwidth of licenses, taking into account the various characteristics of different frequencies, electromagnetic compatibility, geographic topology, public safety, and, in general, the different spectrum needs of broad categories of services. This flexible approach allows for development of technologies to make the most effective and efficient use of the bandwidth by certain services, while permitting the introduction of new services.

Once the broader spectrum allocations decisions are made and service rules are established, spectrum auctions can effectively be used to assign commercial licenses among competing interests. Prior to conducting an auction or any other non-discriminatory and transparent process to award licenses, administrations should provide prospective applicants with sufficient time to make technology investment decisions, establish business plans, and where auctions are used, develop bidding strategies.

Auctions should be conducted in such a way as to create certainty for operators about when spectrum will be available for use. Auctioned spectrum should be unencumbered where possible. To the extent that spectrum is encumbered, the proceeds from the auction should be used to fund the relocation of incumbents. This will provide greater certainty in the auction process and accelerate the introduction of new services and help relieve some of the upfront burden of paying the auction debt prior to deployment of the system and generation of revenue.

III. *3G Terrestrial Spectrum Requirements*

At the 2000 World Radiocommunications Conference (“WRC-2000”), the International Telecommunications Union (“ITU”) identified additional spectrum to support the future demand for advanced mobile services; known in ITU parlance as IMT-2000, but commonly referred to as Third Generation wireless (“3G”). In preparation for WRC-2000, the Radiocommunications Sector of ITU (“ITU-R”) investigated the total spectrum requirements for mobile telecommunications in the three ITU Regions. The study was based on methodologies documented in ITU-R Recommendation M.1390 and the results were published in ITU-R Report M.2023.

The result for Region 2, which includes the United States, was that 390 MHz is forecasted as the total terrestrial mobile spectrum requirement in the year 2010 in those geographical areas where the traffic is highest. Currently licensed commercial terrestrial mobile spectrum in the U.S. is in total 189 MHz, comprised of:

- 50 MHz for Cellular at 824-849 MHz and 869-894 MHz;

- 120 MHz for Personal Communications Services (“PCS”) at 1850-1910 MHz and 1930-1990 MHz;
- 14 MHz for Specialized Mobile Radio (“SMR”) in the 800 MHz land mobile bands;
- 5 MHz for SMR in the 900 MHz land mobile bands;

The resulting additional spectrum requirement for terrestrial mobile needed to fulfill the forecasted requirement is about 200 MHz (390 – 189).

In conclusion, a total of 390 MHz of spectrum will be required in the United States in 2010 to support terrestrial commercial mobile services. Only 189 MHz has currently been allocated for such services. Consequently, approximately 200 MHz of additional spectrum must be allocated to support the growth of the wireless industry over the next decade.

Are the study results still valid?

- The ITU-R Task Group 8/1 (TG 8/1) worked for more than two years to develop internationally agreed methodologies for the prediction of spectrum requirements for IMT-2000. These methodologies were then used with appropriate and internationally agreed input parameters to arrive at IMT-2000 spectrum requirements for each Region of the world. The study has not been refuted since its publication.
- The existing requirements were established with the wide participation of the U.S. Government and wireless industry at the national level. The United States held key leadership positions in committees within the ITU that addressed IMT-2000 spectrum requirements such as the ITU-R TG8/1.

- There is no new information that suggests that either the internationally agreed methodologies (Recommendations M.1390 and M.1391) or the internationally agreed parameters (Report M.2023) that were employed to arrive at the above results should be changed.

IV. Conclusion

TIA member companies design, develop and manufacture communications equipment, including terrestrial and satellite wireless systems that are subject to, and affected by, the Commission's regulatory oversight and spectrum management responsibilities. TIA therefore has a direct and substantial interest in the spectrum-related activities of the Commission and, more specifically, in the outcome of the work of the Spectrum Policy Task Force in this proceeding. TIA requests that the Commission take into consideration the views expressed above.

Respectfully submitted,

Telecommunications Industry Association

By: _____/s/_____

Bill Belt
Director, Technical Regulatory Affairs

Derek Khlopin
Director, Law and Public Policy

Grant Seiffert
Vice President, External Affairs & Global Policy

1300 Pennsylvania Ave., NW, Suite 350
Washington, DC 20004

July 8, 2002